

AMENDMENTS TO THE CLAIMS

1. (Original) A removal cleaning method for a semiconductor substrate or a semiconductor device with metal wirings by using a remover composition, wherein the remover composition comprises a dissolution agent having an alumina dissolution amount as measured according to the standard test (A-1) of 10 ppm or more, and an inhibitor having an aluminum etching amount as measured according to the standard test (B-1) of 7 nm or less, and the remover composition substantially does not contain a fluorine-containing compound.
2. (Original) The removal cleaning method for a semiconductor substrate or a semiconductor device according to claim 1, wherein the dissolution agent is an acid.
3. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to claim 1 or 2, wherein the inhibitor is an inorganic acid salt and/or an organic acid salt.
4. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to ~~any one of claims 1 to 3~~ claim 1, wherein the inhibitor is one or more salts selected from the group consisting of carboxylates, sulfates, sulfonates, phosphonates, nitrates, hydrochlorides and borates.
5. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to ~~any one of claims 1 to 4~~ claim 1, wherein a weight ratio of

the dissolution agent to the inhibitor (dissolution agent/inhibitor) is 2/1 to 1/30.

6. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to ~~any one of claims 1 to 5~~ claim 1, wherein the remover composition comprises 50% by weight or more of water and has a pH of 1 to 10.

7. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to ~~any one of claims 1 to 6~~ claim 1, wherein the metal wirings comprise aluminum wirings having a wiring width of 180 nm or less.

8. (Original) A removal cleaning method for a semiconductor substrate or a semiconductor device with metal wirings having a wiring width of 180 nm or less by using a remover composition, wherein the remover composition comprises a dissolution agent having an alumina dissolution amount as measured according to the standard test (A-1) of 10 ppm or more, and an inhibitor having an aluminum etching amount as measured according to the standard test (B-1) of 7 nm or less.

9. (Currently amended) The removal cleaning method for a semiconductor substrate or a semiconductor device according to ~~any one of claims 1 to 8~~ claim 1, wherein the metal wirings are metal wirings comprising one or more metals selected from the group consisting of aluminum, copper, tungsten and titanium.

10. (Currently amended) A method of producing a semiconductor substrate or a semiconductor device, comprising the step involving the removal cleaning method for a semiconductor substrate or a semiconductor device as defined in ~~any one of claims 1 to 9~~ claim 1.

11. (Original) A remover composition comprising an acid, and an inorganic acid salt and/or an organic acid salt, wherein the acid, and the inorganic acid salt and/or the organic acid salt are any one of the following (i) to (v):

- (i) the acid is 1-hydroxyethylidene-1,1-diphosphonic acid, and the inorganic acid salt and/or the organic acid salt is one or more salts selected from the group consisting of carboxylates, sulfates, sulfonates, phosphonates, nitrates, hydrochlorides and borates;
- (ii) the acid is sulfuric acid, and the inorganic acid salt is a sulfate and/or a nitrite;
- (iii) the acid is oxalic acid, and the inorganic acid salt is a phosphonate;
- (iv) the acid comprises sulfuric acid and oxalic acid, and the inorganic acid salt is a sulfate; and
- (v) the acid comprises 1-hydroxyethylidene-1,1-diphosphonic acid and oxalic acid, and the inorganic acid salt is a sulfate.

12. (Original) A remover composition, comprising a) water, and b) a compound having a solubility (25°C) in water of 10 g or more/100 g of water, wherein the content of the water a) is 50 to 99.8% by weight, and the content of the compound b) is 90% by weight or more of the portion of the remover composition excluding the water a), and the remover composition has an

aluminum oxide dissolution amount as measured according to the standard test (A-2) of 10 ppm or more, and an aluminum etching amount as measured according to the standard test (B-2) of 7 nm or less.

13. (Original) The remover composition according to claim 12, wherein the remover composition comprises an acid, and an inorganic acid salt and/or an organic acid salt as the compound b).

14. (Original) The remover composition according to claim 13, wherein the acid is contained in an amount of 0.01 to 5% by weight, and the inorganic acid salt and/or the organic acid salt is contained in an amount of 0.2 to 40% by weight.

15. (Currently amended) The remover composition according to ~~any one of claims 12 to 14~~ claim 12, wherein the remover composition has a pH of 1 to 10.

16. (Currently amended) A method of cleaning a semiconductor by using the remover composition as defined in ~~any one of claims 12 to 15~~ claim 12.

17. (Original) The method of cleaning a semiconductor according to claim 16, wherein the semiconductor is a semiconductor with aluminum wirings having a wiring width of 180 nm or less.

18. (Currently amended) A method of producing a semiconductor, comprising the step of cleaning using the cleaning method as defined in claim 16 or 17.

19. (Original) A water-based remover composition, comprising an aluminum oxide dissolution agent and an aluminum corrosion inhibitor, wherein the water-based remover composition has: 1) a water content of 50% by weight or more; 2) an aluminum oxide dissolution amount as measured according to the standard test (A-2) of 10 ppm or more; 3) an aluminum etching amount as measured according to the standard test (B-2) of 7 nm or less; and provides 4) a pH change before and after the standard test (A-2) of 0.5 or less.

20. (Original) The remover composition according to claim 19, wherein the aluminum oxide dissolution agent is an acid, and the aluminum corrosion inhibitor is an inorganic acid salt and/or an organic acid salt.

21. (Currently amended) The remover composition according to claim 19 or 20, wherein the remover composition has a pH of 1 to 10.

22. (Currently amended) A method of continuous cleaning of a semiconductor, comprising the step of cleaning at 60°C or lower, by using the remover composition as defined in ~~any one of claims 19 to 21~~ claim 19.

23. (Original) The method of continuous cleaning of a semiconductor according to claim 22,

wherein a semiconductor substrate or a semiconductor device with aluminum wirings having a wiring width of 180 nm or less is used.

24. (Currently amended) A method of producing a semiconductor, comprising the step of cleaning using the method of continuous cleaning as defined in claim 22 or ~~23~~.